

ABSTRACT

A code division multiple access base station is used in receiving a plurality of data signals over a shared spectrum. Each received data signal experiences a similar channel response. A combined signal of the received data signals is received over the shared spectrum. The combined signal is sampled at a multiple of the chip rate. A channel response is estimated. A column of a channel correlation matrix is determined using the estimated channel response. A spread data vector is determined using the determined column, the estimated channel response, the received combined signal and a fourier transform. Data of the data signals is estimated using the spread data vector.